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CLAIMS

1. (Amended)

An optical recording medium, characterized by
5 comprising:

a data recording layer on which contents data is recorded
by irradiation of an optical beam, and

a visual information recording layer on which visual
information which is visually recognized and indicative of
10 information regarding the contents of the contents data is
recorded by irradiation of the optical beam,

wherein the data recording layer and the visual
information recording layer are laminated, and

the visual information recording layer has a visual
15 information area for recording the visual information, and
a visual information management area wherein at least one of
recording layer information indicative that the recording
layer is the visual information recording layer, recording
management information indicative of presence or absence of
20 a record of the visual information, an area information
indicative of a recordable area of visual information, and
contents information indicative of the contents of the visual
information are recorded.

25 2. (Amended)

The optical recording medium according to claim 1,
characterized in that the data recording layer has a data

recording area for recording the contents data, and a data management area wherein at least one of the recording layer information indicative that the recording layer is the data recording layer, and recording medium information indicative
5 that the visual information recording layer is provided on the optical recording medium is recorded.

3. (Deleted)

10 4. (Deleted)

5. (Deleted)

6. (Amended)

15 The optical recording medium according to claim 1 or 2, characterized in that the visual information recording layer has a visual information area on which the recording layer information indicative that the recording layer is the visual information recording layer is regularly recorded.

20

7. (Deleted)

8. (Amended)

25 The optical recording medium according to claim 2, characterized in that the data recording layer has the data management area wherein at least one of recording management information indicative of the presence or absence of the record

of the visual information and the area information indicative of the recordable area for visual information is recorded.

9. (Amended)

5 A data recording apparatus that records visual information onto an optical recording medium formed by lamination of a data recording layer onto which contents data is recorded, and a visual information recording layer on which visual information which is visually recognized and indicative
10 of information regarding the contents of the contents data is recorded, the data recording apparatus being characterized by comprising:

an interface that is received the visual information to be recorded;

15 a pickup that is used to record the received visual information; and

a visual-information dedicated drive signal generating device that generates a visual-information dedicated drive signal for driving the pickup in accordance with the received
20 visual information,

wherein the pickup records the visual information onto the visual information recording layer in accordance with the generated visual-information dedicated drive signal, and

in the case that the optical recording medium includes
25 a visual information recording layer having at least one of a recording management area, wherein the visual information is recorded by irradiation of the optical beam from the surface

different from the data recording surface and wherein at least recording layer information indicative that the recording layer is the visual information recording layer, and a visual information area wherein the visual information and recording
5 layer information indicative that the recording layer is the visual information recording area,

a first detecting device that detects at lest one of the recording layer information recorded in the recording management area of the visual information recording layer and
10 the recording layer information recorded in the visual information area of the visual information recording layer, and

a first determining device that determines an irradiation surface of the optical recording medium being
15 irradiated with the optical beam in accordance with the detection result of the detecting device.

10. (Amended)

The data recording apparatus according to claim 9, in
20 the case that the optical recording medium includes the visual information recording layer wherein the visual information is recorded by irradiation of the optical beam from the surface different from the data recording surface, and the data recording layer having the data management area wherein at
25 least the recording layer information indicative that the recording layer is the data recording layer, characterized by comprising:

a second detecting device that detects the recording layer information recorded in the data management area of the data recording layer; and

5 a second determining device that determines an irradiation surface of the optical recording medium being irradiated with the optical beam in accordance with the detection result of the detecting device.

11. (Amended)

10 The data recording apparatus according to claim 9 or 10, comprising:

a contents-data dedicated drive signal generating device that, when the contents data is input into the interface, generates a contents-data dedicated drive signal for driving
15 the pickup in accordance with the received contents data; and

a data recording pickup that is different from a visual-information recording pickup which is the pickup for recording the visual information and that records the contents data onto the data recording layer in accordance with the
20 contents-data dedicated drive signal generated by the contents-data dedicated drive signal.

12. (Deleted)

25 13. (Amended)

The data recording apparatus according to claim 11, characterized in that the visual-information recording pickup

has a NA (numerical aperture) lower than that of the data recording pickup.

14. (Amended)

5 The data recording apparatus according to claim 11, characterized in that the visual-information recording pickup emanates an optical beam having a longer wavelength than the data recording pickup.

10 15. (Deleted)

16. (Deleted)

of visual information with laser, since the surface on which the visual information is formed is used as the data recording surface, problems are not only that the visual information cannot be easily recognized, but also that, when there is not
5 a free area available, the visual information cannot be sufficiently recorded.

[0007]

The present embodiment is made in view of the respective problems described above, one example of objects of the
10 invention is to provide an optical disk manufacturable by a conventional recording medium manufacturing method and is recordable by an information recording apparatus and to provide a data recording apparatus for recording contents data on the optical disk.

15

Means for Solving the Problems

[0008]

The above object of present invention can be achieved by the present invention of claim 1. The present invention
20 of claim 1 is provided with; a data recording layer on which contents data is recorded by irradiation of an optical beam, and a visual information recording layer on which visual information which is visually recognized and indicative of information regarding the contents of the contents data is
25 recorded by irradiation of the optical beam, wherein the data recording layer and the visual information recording layer are laminated, and the visual information recording layer has

a visual information area for recording the visual information, and a visual information management area wherein at least one of recording layer information indicative that the recording layer is the visual information recording layer, recording management information indicative of presence or absence of a record of the visual information, an area information indicative of a recordable area of visual information, and contents information indicative of the contents of the visual information are recorded.

10 [0009]

The above object of present invention can be achieved by the present invention of claim 9. The present invention of claim 1 records visual information onto an optical recording medium formed by lamination of a data recording layer onto which contents data is recorded, and a visual information recording layer on which visual information which is visually recognized and indicative of information regarding the contents of the contents data is recorded, the present invention is provided with; an interface that is received the visual information to be recorded; a pickup that is used to record the received visual information; and a visual-information dedicated drive signal generating device that generates a visual-information dedicated drive signal for driving the pickup in accordance with the received visual information, wherein the pickup records the visual information onto the visual information recording layer in accordance with the generated visual-information dedicated drive signal, and

in the case that the optical recording medium includes a visual information recording layer having at least one of a recording management area, wherein the visual information is recorded by irradiation of the optical beam from the surface different from the data recording surface and wherein at least recording layer information indicative that the recording layer is the visual information recording layer, and a visual information area wherein the visual information and recording layer information indicative that the recording layer is the visual information recording area, a first detecting device that detects at least one of the recording layer information recorded in the recording management area of the visual information recording layer and the recording layer information recorded in the visual information area of the visual information recording layer, and a first determining device that determines an irradiation surface of the optical recording medium being irradiated with the optical beam in accordance with the detection result of the detecting device.

Brief Description of the Drawings

[0010]

Fig. 1 is a view showing a physical structure of an optical disk of a first embodiment according to the present invention.

FIG. 2 is a view showing a data structure of the optical disk of the first embodiment according to the present invention.

FIG. 3 is one example of an optical disk when visual